

REMARKS

Claims 1-33 are pending in the present application. Claims 20-33 have been canceled, and Claim 13 has been amended, leaving Claims 1-19 for consideration upon entry of the present Amendment. Claim 13 and the Specification have been amended to correct minor typographical errors. Support for these amendments is found in the Specification and Claims as originally filed. No new matter has been introduced by these amendments. Reconsideration and allowance of the claims is respectfully requested in view of the above amendments and the following remarks.

Election/Restriction

In a telephone conversation held on October 17, 2002 with the Examiner, Applicants made a provisional election with traverse of Claims 1-19. Applicants affirm this provisional election in this response. Claims 20-33 are, therefore, canceled. However, this election is being made without prejudice to Applicants' rights with respect to Claims 20-33.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1-19 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Applicants' admissions. In particular, the Examiner states that for Claims 1-3, Applicants admit in the Specification that the prior art teaches a flexible compressible foam layer adhered to one side of a reinforcing film with an adhesive disposed on the opposite side of the film. The Examiner contends that Applicants admit that the prior art teaches that an adhesive layer is disposed on the outside of the foam layer, and that the tapes are typically made in the thickness of 15 to 60 mil. The Examiner further states that Applicants appear to admit that in the prior art the cushioning foam layer (polyethylene, ethylvinyl acetate, polyvinyl chloride, or polyurethane) is laminated to one side of a PET film, and a second adhesive layer is disposed between the PET film and a release layer.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed.

Cir. 1988). Establishing a prima facie case of obviousness requires that all elements of the invention be disclosed in the prior art. *In re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A 1970).

Independent Claims 1 and 13 set out in part: a foam cushion tape, comprising a compressible polyurethane foam layer and a composite reinforcing film comprising an anchoring layer and a reinforcing layer, wherein the second side of the polyurethane foam is disposed on the anchoring layer of the composite reinforcing film. Thus, in both claims, the anchoring layer is disposed between the reinforcing layer and the compressible polyurethane foam layer. In order to establish a prima facie case of obviousness, therefore, the prior art must teach at least a polyurethane foam layer and a composite reinforcing film comprising both an anchoring layer and a reinforcing layer, wherein the anchoring layer is disposed between the polyurethane foam layer and the reinforcing layer.

The Examiner admits that the prior art disclosed in Applicants' Specification lacks a specific teaching of including an anchoring layer between the reinforcing layer and the foam layer (Paper No. 6, Page 3, paragraph 6). However, the Examiner takes Official Notice that including an anchor or tie layers, such as the polyvinylidene chloride, polyurethane, etc. in a laminated polymeric structure, which can include a foam layer, is old and well known (*Id.*). Applicants respectfully traverse this rejection.

Applicants respectfully submit that, although tie layers may be well known in the art, the types of materials used by Applicants in their claimed anchoring layers are not used as tie layers. Instead, materials such as polyvinylidene chloride, polyurethane, and the like are used as heat seals (*See, e.g.*, U.S. Patent No. 3,839,078, Column 21, lines 64-66). Here, Applicants are directly casting the foam onto the reinforcing film, and then curing the resulting composite (Specification, Page 15, lines 11-22). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to use heat sealing materials as an anchoring layer in a process that does not use, e.g., a lamination step, in forming the tape. As not all elements of independent Claims 1 and 13 are taught or suggested by Applicants' Specification, and because the Official Notice taken by the Examiner is called into question, Applicants respectfully submit that a prima facie case of obviousness has not been established for independent Claims 1 and 13, for dependent Claims 2-12 and 14-19.

So ?

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Accordingly, Applicants request reconsideration and withdrawal of the rejection of Claims 1-19.

Claims 1-19 further stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Applicants' admissions in view of U.S. Patent No. 3,839,078 to Birchall et al. ("Birchall"). The Examiner admits that the prior art in Applicants' disclosure does not teach an anchoring layer, an element required in Claims 1-19. However, the Examiner states that Birchall is directed to a method of coating substrates, and Birchall teaches that it has been a common practice to coat a surface of a film substrate with one or more adhesion promoting layers which adhere to a film substrate and to which a superstrate readily adheres. Such intermediate coating layers are often referred to as "anchor" coatings and are derived, for example, from an isocyanate-ended polyurethane resin, a phenol-formaldehyde resin or a vinylidene chloride-alkyl acrylate copolymer resin (Column 22, lines 5-14). The Examiner argues that it would have been obvious to one of ordinary skill in the art to modify Applicants' admitted prior arts with an anchor layer, such as a polyvinylidene chloride layer, between the reinforcing film substrate and the polyurethane foam layer, motivated by the desire to improve the adhesion between the laminate layers. Applicants respectfully traverse this rejection.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, contains some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d 1016, 1023 (Fed. Cir. 1996).

Applicants respectfully submit that at the time of Applicants' claimed invention, there was no motivation to combine the anchoring layer with the reinforcing layer to form a reinforcing film disposed on a polyurethane foam as claimed by Applicants. Applicants further submit that such a combination led to unexpected results.

One of the aims of Applicants' claimed invention was to derive a foam cushion tape comprising a reinforcing film and a polyurethane foam, wherein the reinforcing film would not delaminate from the polyurethane foam during removal of the used tape from a workpiece, i.e., a printing plate. Such delamination results from a weak cohesive strength at the surface of the reinforcing film (Specification, Page 2, lines 10-12). That is, Applicants sought a foam cushion tape wherein upon removal of the tape from the workpiece, the reinforcing film would be cleanly removed, i.e., not delaminate. Surprisingly, Applicants have discovered that such a clean removal of the reinforcing film can be accomplished by use of the claimed anchoring layer. Thus, the anchoring layer improves the cohesive strength of the reinforcing layer itself such that the reinforcing film does not delaminate when the tape is removed from the workpiece.

This effect, then, is quite separate and distinct from the type of improved adhesion taught in Birchall. Birchall teaches improving adhesion between two different substrates, that is, between a film substrate and a superstrate. Birchall, however, unlike Applicants claimed invention, does not teach improving the cohesive strength within a single layer itself, i.e., improving the cohesive strength among the particles forming the single reinforcing layer.

Therefore, as Birchall does not teach or suggest a method of improving the cohesive strength within a single layer, but rather teaches a method of improving the cohesive strength among different layers, one of ordinary skill in the art would not have necessarily thought to combine the teachings of Birchall with the prior art disclosed in Applicants' Specification. That is, as Birchall teaches a method of improving adhesion between two layers, and Applicants were concerned with improving the cohesive strength not between two distinct layers, but with improving the cohesive strength within a single layer of material, there is no motivation to combine Applicants' disclosed prior art with Birchall.

Just as there was no motivation to combine, so too was there no reasonable expectation of success. That is, there was no reason to expect that combining Applicants' claimed anchoring layer with the claimed reinforcing layer would produce a reinforcing film having improved internal cohesive strength, which in turn results in a tape having a higher

peel strength thereby allowing for the clean removal of the reinforcing film from the workpiece.

Therefore, because there was no motivation to combine, and because there was no reasonable expectation of success, Applicants respectfully submit that a prima facie case of obviousness has not been established with respect to Claims 1-19. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of Claims 1-19.

Formal Drawings

Applicants are including herein 1 sheet of formal drawings which are to replace the informal drawings filed with the application. No new matter has been included in these drawings.

In light of the foregoing amendments and remarks, reconsideration by the Examiner is respectfully requested. It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should be allowable to Applicants.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Applicants' attorneys.

Respectfully submitted,

CANTOR COLBURN LLP

By 

Leah M. Reimer

Registration No. 39,341

Date: January 27, 2003
Customer No.: 23413
Telephone: (860) 286-2929

VERSION WITH MARKINGS TO SHOW CHANGES MADE

A marked-up version of the 2nd full paragraph on page 3 follows:

Advantageously, this method eliminates the need for a buffing or sanding step after casting, and furthermore eliminates the need for an adhesive between the reinforcing film and the foam layer of the cushion tape. The method also produces a tape that reduces or eliminates delamination of the foam from the reinforcing film during removal of the printing plate from the cylinder after use. The result is a more streamlined and economical manufacturing process. The product tape exhibits improved performance during removal after use compared to known manufacturing methods. It also allows the production of thinner tapes, for example a 15 mil (0.38 millimeter) tape, which the current process cannot produce.

A marked-up version of the 3rd full paragraph on page 4 follows:

As shown in Figure 1, in one embodiment the improved foam cushion tape 10 comprises a layer ~~12~~ of compressible, open-celled polyurethane foam 12 disposed on a composite reinforcing film 14. The thickness of polyurethane foam layer 12 will typically be about 5 to about 60 mils (about 125 to about 1500 microns), and preferably about 12 to about 17 mils (about 300 to about 425 microns). The foam can be of variable compressibility as is known in the art.

A marked-up version of the last paragraph on page 16 and continuing onto page 17 follows:

To test adhesion of the foam to the reinforcing film, a polyurethane foam was cast onto a variety of reinforcing films (Table 1). Accordingly, all foam components (polyol, catalyst and additives except for surfactant, pigment, and isocyanate) were mixed and placed in a holding tank with agitation and under dry nitrogen. This mixture was then pumped at a controlled flow rate to a high shear mixing head of the Oakes type. The isocyanate, surfactant, and pigment mixture were also separately pumped into the mixing head at controlled flow rates and at the proper flow ratios relative to the polyols mixture flow rate. Flow meters were used to measure and adjust the flow rates of the various raw material streams. Dry air was introduced into the mix head using a gas flow rate controller to adjust the airflow rate such that cured material had a density of about 30 pounds per cubic foot (481 -kilograms per cubic meter). After mixing and foaming in the high shear mixer, the materials were pumped through flexible hoses and out through rigid nozzles.

A marked-up version of Claim 13 follows:

Claim 13. (Amended/marked-up) A foam cushion tape, comprising
a compressible, open-celled polyurethane foam layer having a first side and an
opposite second side, wherein the compressible polyurethane foam has a thickness of about 5
to about 60 mils (about 125 to about 1500 micrometers);

a composite reinforcing film comprising an anchoring layer and a reinforcing layer,
wherein

the anchoring layer is selected from the group consisting of polyurethane,
nylon, copolyester, and polyvinylidene chloride, and the reinforcing layer is selected from the
group consisting of polyethylene terephthalate, polybutylene terephthalate, polyvinyl,
polycarbonate, and polyetherimide, and further wherein

the second side of the polyurethane foam is disposed on the anchoring layer of
the composite reinforcing film;

a first pressure sensitive adhesive disposed on the first side of the compressible
polyurethane foam; and

a second pressure sensitive adhesive disposed on the reinforcing layer of the
composite reinforcing film.